Before the
Federal Communications Commission
Washington, DC 20554

In the matter of:	)	
	)	
Implementation of Section 17 of the Cable Television Consumer Protection and Competition Act of 1992	)	ET Docket No. 93-7
	)	
Compatibility Between Cable Systems and Consumer Electronics Equipment	)	

Comments of Mitsubishi Electronics America, Inc.

Mitsubishi Electronics America, Inc. ("MELA") hereby responds to the Notice of Inquiry ("Notice") in which the commission has solicited information regarding means of promoting compatibility between consumer electronics equipment and cable systems, as required by the Cable Television Consumer Protection and Competition Act of 1992 ("Cable Act").

I. Introduction and interest of MELA:

MELA markets an extensive line of consumer electronics products, including direct view color and big screen color televisions and VCRs. A sister company of MELA, Mitsubishi Consumer Electronics America Inc. ("MCEA") is a manufacturer of consumer electronics products, including

direct view color and big screen color televisions. MCEA operates several manufacturing plants in the United States and employs some 1,100 Americans in facilities nationwide. The company is dedicated to increasing the number of it's consumer electronics products designed and manufactured in the United States.

MELA has been an active member of the EIA/CEG and its engineering committees which have worked on this problem over the years and is thoroughly familiar with the issues. MCEA is also an active member of the EIA/NCTA Joint Engineering Committee, a joint industry group which is tackling the same issues. The products marketed by the company conform to industry voluntary standards and even some draft standards developed by these organizations.

MELA has an interest in this proceeding because we have seen the functionality of our products reduced considerably when connected to cable systems. This has a negative effect on the perceived value of our products and is a constant source of complaint from our customers. While we continue to strive to introduce new features to make our product more friendly to the cable television environment, we find this a frustrating endeavor due to fragmentation of the cable industry and the lack of national standards in key areas like channelization, signal security / conditional access and, in the near future, even transmission / compression.

MELA submits that without voluntary industry standards where possible, or appropriate rules and regulations where necessary, the consumer compatibility problem can not be solved. The Commission should

II. Historical Perspective:

In order to understand possible solutions to the present compatibility problems and to prevent the proliferation of continued and future problems between cable TV and consumer electronics equipment a brief historical perspective is necessary.

When the Commission permitted television via airwaves, rules and standards were written to control the service. Amendments provided a new

With premium services gaining popularity and the program providers insistence on secure distribution means, the issue of signal security has developed. Once again the cable industry solved the problem through proprietary means and the set-top converters have evolved into set-top decoders. Multiple signal security schemes have been developed and introduced, often on the system by system basis. Again the industry has made no effort to establish standard in this area. Lately these proprietary hardware has become an instrument to introduce new, but often redundant functions and features with the existing consumer owned hardware as a means to create new revenue sources. The result is increased incompatibility, even interference with the normal operation of TVs and VCRs. This situation inspired Congress to write the bill authorizing the Commission to develop solutions.

III. Consumer Electronics Products Perspective:

It is important to first define exactly what consumer electronics equipment includes and why it is not compatible with present day cable systems.

For the context of this filing, we will include in the category of consumer electronics equipment two items: television receivers (TVs) and video cassette recorders (VCRs). The term, consumer electronics equipment, will not be applied to "set-top-converters" and "set-top decoders" often supplied and owned by the cable operators.

Mitsubishi TVs and VCRs are designed with the following characteristics:

• Designed to comply with FCC rules for broadcast receivers[1].

• Designed to receive analog NTSC signals as defined by FCC Rules[2] and industry standards[3].

• Designed to accommodate Cable Television to the degree standards[4] and rules apply[5].

• Designed for a single, nationwide market.

To continue to provide the most cost effective products based on consumer demand, TV manufacturers should be permitted to build a product which is "Media Independent" so that it will work equally well from a variety of media including off-air and cable. To accomplish this, MELA believes that further rules and regulations will be necessary in certain areas along with open industry standards as appropriate.

FCC rule making should coordinate rules for off-air receivers with rules for CATV receivers. It is critical to create these rules based on the *services* as opposed to the *features*. Examples of service oriented rule making include Part-15 rules for NTSC and pending rules on ATV receivers. New services can be added only through the rule making process such as the recent VBI rule making. Existing rules should be modified to be media independent. New sections of the rules should be added or amended to include specific requirements of alternate media including cable TV. The Commission should continue to rely on open industry standards where appropriate to allow the proliferation of new features within these regulated services.

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1 CFR Title 47, Part 15 as it applies to television receivers and television interface devices.

2 NTSC broadcast rules as defined in CFR Title 47, Part 73 .

3 EIA RS-170A definitions of NTSC color signals

4 By voluntary application of the EIA/NCTA IS-6 channelization plan.

5 For example Section 15.64 and Part 76 of Title 47.

To best serve the public interest, features should not be regulated, but services should. Services intended for consumers that occupy bandwidth on airwaves or any physical media (whether it is twisted pair, coaxial cable, or fiber optic cable) should fall within the jurisdiction of the Commission's rules. This will be the only way to ensure open markets and compatibility for all hardware oriented features.

The public interest will be served best if the cable industry is prohibited from rendering obsolete those features found in the two hundred million TVs or ninety million VCRs in use today.

The Commission should not try to solve all the compatibility problems in a single rule making process. Both short term and long term solutions should be identified and implemented on a systematic basis.

IV. Overview of Current Problem:

There are three fundamental areas that have created the current incompatibility problems between consumer electronics equipment and CATV:

1. The installed base of TVs and VCRs are becoming obsolete because of a now mandated growth of addressable signal security technology.
2. Converters are needed on some existing TVs and VCRs to achieve the desired performance in cable TV environments.
3. Multiple techniques and services are used by CATV so that no single, comprehensive solution can be built into TVs and VCRs.

- Many different and incompatible forms of signal security and conditional access are in use today because no rules or regulations

- Despite the proposed standard, no common channelization plan has been adopted by cable systems because no rules or regulations exist in this area.
- Many different and incompatible consumer services are in use and are being introduced continuously on the hardware proprietary way and the system by system basis.

V. Proposed Short Term Solutions:

Because there are no modifications that can be made practically to existing consumer TV receivers to make them compatible with the cable services, MELA believes that the best short term solution to the issue of lost features in existing TVs and VCRs is for the cable companies to convert their plants to "Clear-Channel" technologies like interdiction. Existing cable plants can be effectively and economically converted to "Clear-Channel" security systems over the period normally designated for capital depreciation[6].

A promising new technology is emerging that can actually improve the level of security for cable systems, above what they experience by alternate approaches, while allowing all consumer products to benefit from all the features they include. This new technology is called "Broad band-descrambling" or "Multichannel-descrambling." The Commission and industry should promote the testing and verification process of this

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6 In a separate FCC action, the commission has already indicated that a period of seven years should be used to allow replacement of all cable converter boxes that do not conform to the Commissions rules for cable system performance.

technology as the most promising solution for both consumers and cable operators.

Set-top-converters should continue to be available through regular retail channels to address performance issues with certain TVs and VCRs. MELA also believes that it will be necessary to include certain performance oriented standards for TVs and VCRs identified as "cable ready", but only as part of a total system solution. They should be accompanied by complementary standards and regulations for cable companies to be identified as *"TV ready."*

The so called "multiport", or any other mandated cable specific interface on consumer electronics products should not be considered as a possible short term solution. Based on normal obsolescence, by the time products with such interface port would reach market penetration levels to effect the compatibility problem, the technology will evolve leaving these ports potentially unused, but saddle the consumer electronics industry with disproportionate costs burdens.

VI. Proposed Long Term Solutions:

The Commission should consider long term solutions as the most important aspect of this rule making process. Since the installed base of TVs and VCRs as well as the existing cable plants limit the solutions for the near term, no such limits exist for the long term because the consumer hardware doesn't exist.

The only way to ensure an effective long term solution is for the Commission to issue and/or amend rules in three areas. The rules should be amended so that they will address all methods for transmission into the

home, including air-waves, coaxial cable, fiber cable, and twisted-pair wires. No common carrier of programming services to the home should be exempted from appropriate regulations.

The following three areas should be regulated:

1. Channelization and spectrum allocation.
2. Signal security and conditional access.
3. Transmission and compression formats.

An immediate moratorium should be imposed on the introduction of all new, non-regulated services until rules and regulations are in place in these three areas. While asking for a moratorium on the implementation of new services such as compressed-digital 525 may sound anti-progress, in fact the alternative is mass confusion on a scale that would make the current compatibility problem seem like child's play.

VII. Conclusion:

MELA welcomes the opportunity to provide these comments to the Commission and look forward to constructive participation in the process that follows.

Respectfully submitted,

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Appendix

Specific Answers to some of the Commission's Questions:

[12.6] No new services introduced on cable that go beyond channel 125 can be received by Mitsubishi TVs and VCRs. The practice of *Channel Mapping* as used by the cable industry can not be accommodated by Mitsubishi TVs and VCRs because there is no standardized practice and existing transmission and formats for this service fall outside the Commission's rules[7].

Regarding the use of security systems, some methods of signal security do not interfere with Mitsubishi TV and VCR features and functions while other methods do interfere.

The methods of signal security that do interfere with features and functions of Mitsubishi TVs and VCRs include any security systems based on the use of set-top-decoders or set-back-decoders.

[12.7] Three methods of signal security do not interfere with features and functions Mitsubishi TVs and VCRs: traps; interdiction; and broad-band descrambling.

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7 The EIA is presently working to create a standard scheme to provide this service as part of the EIA-608 standard for line-21 data transmission. The EIA has accordingly petitioned the Commission to authorize these new data services in the vertical blanking interval. Conversely equipment manufacturers serving the cable industry have independently created several non-compatible systems to provide this service, none of which fall within any rules or regulations of the commission.

[13.1] All Mitsubishi TVs and VCRs sold to consumers are affected by the manner of cable signal delivery.

[13.2] In addition to features previously cited in the NOI, the following features in Mitsubishi TVs and VCRs are effectively disabled by the use of cable converter boxes:

1. QUICKVIEW. This is a tuner feature that allows easy, one-button access to the most recent channel selected. This feature is found on every 1993 Mitsubishi TV and 2 of 5 VCR models.
2. SUPER-QUICKVIEW. This is a more advanced version of QV that includes a user programmed table of favorite channels. These favorite channels can be easily stepped through with one button. This feature is found on 30 of 36 TV models and 2 of 5 VCR models for 1993.
3. CHANNEL LABELS: This is a tuner feature that allows the consumer to program the channel names or call letters associated with each station. These channel names are then displayed after each channel change. This feature is found on 11 of 36 TV models and 2 of 5 VCRs for 1993.
4. PROGRAM TIMER. This feature allows the TV to turn on to a pre-selected channel at a predetermined time. This feature is on 30 of 36 TV models for 1993.
5. HOME THEATER MODE. This feature allows external video processors or switching devices to be connected to the TV while the TV maintains all tuning functions and features. This feature is on 20 of 36 TV models for 1993.
6. CHANNEL AUTOPROGRAMMING. This feature allows the TV to automatically select or omit channels from the line-up by scanning for valid signals. This feature is on all TV and VCR models for 1993.

7. VCR+ PROGRAMMING. This feature allows VCRs to be programmed for channel and time by entering a number printed in newspapers and TV Guides. This feature is on 1 of 5 VCR models for 1993.

[13.3] All Mitsubishi TVs and VCRs currently available include the capacity to tune all 125 CATV channels[8] as defined in the IS-6 recommended channelization plan.

[13.4.1] The following new features in Mitsubishi TVs and VCRs will be effectively disabled by cable systems that require the use of converter boxes:

1. AUTO CHANNEL NAMING. This feature uses data contained in the video signal to automatically provide channel names. This is a new TV feature planned for introduction in 1993.
2. AUTO CLOCK SETTING. This feature uses data contained in the video signal to automatically set the TVs internal clock. During initial set-up, the TV scans the available channels to search for the clock signal. It will also return to this channel after any extended loss of AC power. This is a new TV feature planned for introduction in 1993.

[13.5, 14.4, 14.5, 14.6, 14.11 & 14.13] We respectfully submit that standards and/or rules are required on both sides of this issue. While certain performance minimums and capabilities should be expected of consumer TVs and VCRs to be listed as "cable-ready". It is imperative that certain complementary performance minimums and capabilities should be required from cable systems. While these extended capabilities and

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8 These products are designated as 181 channel tuners as the commonly used counting method counts each channel that occupies a different frequency separately.

performance minimums should not be mandated any more than they are for consumer products, a designation of "Consumer-Compatible" or "TV-Ready" should be associated with them.

Both TVs and Cable systems should comply with the Commission's standards or rules in the following areas:

1. Adherence to a channel numbering plan as defined by IS-6 or appropriate FCC rules.
2. All consumer services conform to existing FCC rules or industry standards.
3. Connector and impedance standards as defined by industry standards or appropriate FCC rules.

[14.10] TVs and VCRs should also comply with standards or rules in the following areas (in addition to all appropriate rules for broadcast receivers) to be listed as "cable-ready:"

4. Minimum shielding performance to provide acceptable rejection of direct-pick-up (DPU) interference as defined by industry standardized measurement techniques.
5. Maximum local oscillator leakage as defined by industry standardized measurement techniques.

Cable systems should also comply with standards or rules in the following areas (in addition to all existing rules) to be listed as "TV-ready:"

6. Specific carrier levels with regard to minimums, maximums and differential levels.
7. Employment of any one of the "Clear-Channel" security systems including traps, interdiction or broad-band descrambling.

[13.6] The IS-6 channelization plan defined 125 channels. While virtually all TVs and VCRs now have the capacity to tune to this range, almost no cable systems have used anything above channel 79 (550 MHz). Because of this, 79 channels or the range up to 550MHz should be sufficient for designation as cable ready[9].

[14.1] All existing cable plants can be effectively and economically converted to "Clear-Channel" security systems over the period normally designated for capital depreciation[10].

[14.2] A promising new technology is emerging that can actually improve the level of security for cable systems, above alternate approaches, while allowing all consumer products to benefit from the features they include. This new technology is called "Broadband-descrambling" or "Multichannel-descrambling." The regulations and industries should promote the testing and verification process of this technology as the most promising solution for both consumers and cable operators.

[14.9] There are no modifications that can be practically done on existing consumer TV equipment to make them more compatible with the cable services.

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9 We recognize the need to plan for new services and extensions to the bandwidth as technology progresses; however, frequencies above 550 MHz should be reserved for future digital services exclusively.

10 In a separate FCC action, docket 92-508 the commission has already indicated that a period of seven years should be used to allow replacement of all cable converter boxes that do not conform to the Commissions rules for cable system performance.

[16.5] We currently sell 19 models of TVs with "Learning" type remote controls. These remotes can be programmed to operate basic functions of most cable converter boxes.

[16.6] Because of the multitude of differing functions and key names in various brands of cable converters, only the basic and common functions such as channel up/down, power, and number keys are generally compatible with Mitsubishi remotes.

[16.9] The Commission can best encourage the commercial availability of remote controls for cable boxes by requiring a moratorium to halt the introduction of new IR codes and functions for cable boxes and freezing the number of IR codes as they exist today[11]. It will also be necessary to pass rules which prevent cable operators from being able to disable the remote

[17.2] The introduction of digital transmissions will change the nature of the interface between consumer equipment and the cable system. Digital transmission will allow a higher level of security that can be based on renewable and replaceable technology. The introductions of these services should be closely coordinated by the Commission to simplify compatibility.